PEDro Newsletter 6 October 2020

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PEDro

Physiotherapy Evidence Database

A. PEDro update (6 October 2020)

PEDro contains 48,545 records. In the 6 October 2020 update you will find:

- 37,682 reports of randomised controlled trials (36,822 of these trials have confirmed ratings of methodological quality using the PEDro scale)
- 10,180 reports of systematic reviews, and
- 683 reports of evidence-based clinical practice guidelines.

PEDro was updated on 6 October 2020. For latest guidelines, reviews and trials in physiotherapy visit *Evidence in your inbox*.

B. DiTA update (6 October 2020)

DiTA contains 1,871 records. In the 6 October 2020 update you will find:

- 1,687 reports of primary studies, and
- 184 reports of systematic reviews.

DiTA was updated on 6 October 2020. For the latest primary studies and systematic reviews evaluating diagnostic tests in physiotherapy visit *Evidence in your inbox*.

C. PEDro celebrates World Mental Health Day 2020

October 10, 2020 is #WorldMentalHealthDay, a campaign by the World Federation for Mental Health to promote universal access to mental health care. The COVID-19 pandemic has made this year a challenging one for most of us. But for those with mental health conditions, social isolation has had an even greater impact.

Physiotherapists play a significant role in improving the wellbeing of those with mental health conditions, through facilitating physical activity, pain management and social participation. Physiotherapists are also active in health promotion, encouraging people of all ages and abilities to participate in exercise as a way of maintaining good mental health.

There is a significant amount of high-quality clinical research to guide the physiotherapy management of people with mental health conditions. PEDro currently indexes over 1,000 clinical practice guidelines, systematic reviews and randomised controlled trials evaluating physiotherapy treatment for people with mental health conditions.

You may like to review the following practice guidelines, which provide useful summaries for physiotherapists:

- European Psychiatric Association guidance on physical activity as a treatment for severe mental illness: a meta-review of the evidence and position statement (supported by the International Organization of Physical Therapists in Mental Health), 2018
- Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders, 2015
- Mental health care in the perinatal period: Australian clinical practice guideline, 2017

There is a wealth of systematic reviews relevant to mental health; links to recent reviews can be found below:

- McGettigan M, et al. Physical activity interventions for disease-related physical and mental health during and following treatment in people with non-advanced colorectal cancer. *Cochrane Database Syst Rev* 2020;Issue 5
- Smith SM, et al. Interventions for improving outcomes in patients with multimorbidity in primary care and community settings. *Cochrane Database Syst Rev* 2016;Issue 3
- Ashdown-Franks G, et al. Exercise as medicine for mental and substance use disorders: a meta-review of the benefits for neuropsychiatric and cognitive outcomes. *Sports Med*;50(1):151-70

- Vogel JS, et al. The effect of mind-body and aerobic exercise on negative symptoms in schizophrenia: a meta-analysis. *Psychiatry Res* 2019;279:295-305

Earlier this year the PEDro team posted a summary and infographic for a systematic review that found that exercise improves symptoms of depression in people with chronic health conditions. Aerobic exercise has potentially clinically important effects on symptoms of depression in people with chronic non-communicable diseases. Certainty of evidence was strongest in people with cardiovascular disease. The exercise programs investigated targeted the health effects of the chronic conditions and were not specifically designed for symptoms of depression per se. It is also worth noting that this systematic review did not aim to assess the effect of exercise in people with clinical diagnosis of major depressive disorder. The citation is:

- Beland M, et al. Aerobic exercise alleviates depressive symptoms in patients with a major non-communicable chronic disease: a systematic review and meta-analysis. *Brit J Sports Med* 2020;54:272-8

You can search PEDro to find high-quality clinical research evaluating physiotherapy management for specific mental health conditions by entering the name of the condition in the "abstract and title" field. You can further restrict your search to a specific population by selecting a category in the subdiscipline field, such as "gerontology", "paediatrics" or "continence and women's health".

D. A description of the primary studies of diagnostic test accuracy indexed in DiTA

In 2019 the team behind PEDro launched a new database, called DiTA (Diagnostic Test Accuracy; dita.org.au). DiTA is modelled on PEDro and provides a comprehensive index of studies and reviews evaluating the accuracy of diagnostic tests used by physiotherapists. The intention is that DiTA will help physiotherapists and others use research evidence to select and inform the interpretation of diagnostic tests.

A recent study provides an overview of how DiTA is constructed and describes the number and scope of the studies indexed in DiTA. Sensitive searches are conducted to identify studies and reviews that evaluate the accuracy of diagnostic tests used by physiotherapists. Medline, Embase, CINAHL and the Cochrane Database of Systematic Reviews were searched from their inceptions, and monthly searches are now used to update DiTA. To be included in DiTA, studies need to (a) investigate both a pathology and patients that a physiotherapist could assess in clinical practice, (b) investigate an index test that a physiotherapist would perform themselves (rather than one which they would request), (c) investigate the concordance of an index test with a reference standard, and

(d) be published in full in a peer-reviewed journal. Reviews must (a) contain a Methods section that describes the search strategy and inclusion criteria, (b) include at least one study or review that satisfies the criteria for inclusion on DiTA, and (c) be published in full in a peer-reviewed journal. Two reviewers determine eligibility for indexing in DiTA, with disagreements resolved by discussion or arbitration by a third reviewer. The citation (authors, title, journal name, publication date, volume, number, pages, and abstract) are added to DiTA. Additional search terms are applied to each article to define the area of practice (subdiscipline), body part, pathology, index test (both name and type), and reference test (again, both name and type).

As at 1 February 2020, DiTA included 1,419 articles reporting the results of diagnostic test accuracy studies. The most frequently studied subdisciplines were 'musculoskeletal' (74%) and 'cardiothoracics' (17%). The most frequently studied pathologies involved joints (33%) and the nervous system (12%). The most frequently studied body part was the 'lower leg or knee' (16%). Most studies investigated index tests that were 'physical examination' procedures (60%), while fewer investigated 'questionnaires' (30%) and 'health technologies' (25%). The reference standard categories of 'health technology' (63%), 'physical examination' (20%) and 'surgery' (16%) were the most often reported.

There is a rapidly growing body of evidence on the accuracy of diagnostic tests relevant to most physiotherapy subdisciplines. These types of studies are rapidly becoming more prevalent. While the volume of evidence is substantial, it is not yet clear how much of the evidence is of good enough quality to support clinical decision-making. We believe that gathering together all of the available diagnostic test accuracy studies and reviews into one database will make it easier for physiotherapists to rapidly access information on diagnostic tests relevant to their patients, and we believe that this is both important and likely to improve clinical practice.

Kaizik M, et al. A description of the primary studies of diagnostic test accuracy indexed on the DiTA database. *Physiother Res Int* 2020 Sep 11;Epub ahead of print

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E. Group-based pelvic floor muscle training is not inferior to individual training for urinary incontinence in older women

In a blog for #MyPTArticleOfTheMonth back in October 2019, Kari Bø highlighted the results of a randomised controlled trial that was presented at the International Continence Society's annual conference in Gothenburg, Sweden. Chantale Dumoulin led this well-designed, non-inferiority, multicenter randomised controlled trial that compared individual pelvic floor muscle training to group training for older women with stress and mixed urinary incontinence. The trial has now been published in *JAMA Internal Medicine*, and we summarise the results in this blog.

Urinary incontinence is a common health concern experienced by older women (> 60 years). Individual pelvic floor muscle training is the recommended first-line treatment for stress or mixed urinary incontinence in women, but delivery is limited by human and financial resources. Pelvic floor muscle training delivered to a group of women, rather than individually, could overcome these resource barriers. This trial was designed to address the evidence gap of whether group-based pelvic floor muscle training performs as well as individual training. The primary aim was to determine whether the effectiveness of group-based pelvic floor muscle training was not inferior to individual pelvic floor muscle training in women aged 60 years or older with stress or mixed urinary incontinence.

Community-dwelling women aged 60 years or older with symptoms of stress or mixed urinary incontinence were recruited though advertising on community notice boards, social media and newspapers as well as in the gynaecology and urology clinics in the two trial centres in Montreal and Sherbrooke, Canada. Participants were stratified by centre and type of incontinence, then a concealed and random process was used to allocate participants to either individual- or group-based training sessions. After an individual session was conducted to learn how to contract their pelvic floor muscles, participants undertook 12 weeks of 1-hour weekly pelvic floor muscle training sessions as part of a group of 8 women or individually. Participants in both groups were instructed to do exercises at home. Treatment was provided by experienced pelvic floor physiotherapists. Neither the participants nor the therapists could be blinded to this complex intervention. The primary outcome was the percentage reduction in urinary incontinence episodes at 1 year post-randomisation, as reported in a 7-day bladder diary and relative to pre-treatment values. The margin for noninferiority was prespecified at 10%. Assessors could not be blinded to the primary outcome, but were blinded for some of the secondary outcomes. Adverse events were monitored. While economic data were collected, these were not reported in this article. A per protocol analysis (including all participants who completed the 1 year assessment) was used.

362 women were enrolled in the trial, with 178 allocated to group training and 184 to individual training. 319 participants (88%) completed the 1 year follow-up. There were no imbalances between the groups at baseline. Participants in both groups attended almost 100% of sessions and 87% completed the prescribed home exercise at least 4 times/week. Median percentage reduction in urinary incontinence episodes was 74% for the group-based pelvic floor muscle training and 70% for individual training. The median between-group difference was -4% in favour of group-based training, with a 95% confidence interval of -10% to 7%. Similar results were produced using an intention-to-treat analysis. Because the upper boundary of the 95% confidence interval was lower than the prespecified margin for noninferiority of 10%, group-based training was not inferior to individual training. No serious adverse events occurred in either group.

Group-based pelvic floor muscle training is not inferior to the recommended individual

training for the treatment of stress and mixed urinary incontinence in older women. Widespread use group-based training in clinical practice may help increase continence-care affordability and treatment availability. Kari Bø says: “some advantages of group pelvic floor muscle training are that it is less resource intense than individual training, is motivating for both participants and the physiotherapist, and the training can be combined with health education and many other exercises important for women’s health.”

Read more on PEDro.

Dumoulin C, et al. Group-based versus individual pelvic floor muscle training to treat urinary incontinence in older women: a randomized clinical trial. *JAMA Intern Med* 2020 Aug 3:Epub ahead of print

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F. Infographic for systematic review that found exercise alone or combined with education probably reduces future low back pain intensity and disability in working aged adults

Last month we summarised the systematic review by de Campos et al. The review concluded that exercise alone or combined with education probably reduces future low back pain intensity and disability in working aged adults.

Some suggestions for providing exercise to prevent low back are included in this infographic.

de Campos TF, et al. Prevention strategies to reduce future impact of low back pain: a systematic review and meta-analysis. *Brit J Sports Med* 2020 Jul 9:Epub ahead of print

Read more on PEDro.

G. Systematic review found that pulmonary rehabilitation can improve functional capacity and quality of life in people with pneumoconiosis

Pneumoconiosis is a class of interstitial lung disease where inhalation of mineral dust (eg, silica) has caused interstitial fibrosis. It is commonly caused by occupational exposure. In 2018 pneumoconiosis accounted for over 80% of occupational diseases recorded in China. This systematic review aimed to estimate the effects of pulmonary rehabilitation compared to routine treatment on functional capacity and quality of life in people with pneumoconiosis.

Guided by a prospectively registered protocol, sensitive searches were performed in nine databases (including PubMed, Embase and Cochrane CENTRAL), three trial registries, and citation tracking of included trials and existing systematic reviews. To be included, trials needed to have compared pulmonary rehabilitation to routine treatment in people with

pneumoconiosis. Pulmonary rehabilitation had to include exercise training, and could also include health education, nutritional intervention and psychosocial support. The primary outcomes were functional capacity (measured by the 6-minute walk test) and quality of life (measured by the St George's Respiratory Questionnaire). Two reviewers independently selected trials, extracted data and evaluated trial quality. Disagreements were resolved by discussion or by a third reviewer. Trial quality was assessed using the Cochrane risk of bias tool. Certainty of the evidence was evaluated using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system. Meta-analysis was used to calculate the mean between-group difference and 95% confidence interval (CI). Two subgroup analyses were performed to evaluate the: (1) content of the intervention (exercise training combined with health education vs. exercise training combined with health education plus other interventions); and (2) duration of intervention (< 3 months vs. >= 3 months).

16 trials (1,307 participants) were included in the analyses. All but one trial were conducted in China. The duration of pulmonary rehabilitation ranged from 1.5 to 12 months, with 6 trials using a duration of < 3 months and 10 trials a duration of >= 3 months. The most common content of the pulmonary rehabilitation interventions evaluated were exercise training combined with health education and respiratory training (6 trials) and exercise training in combination with health education (5 trials).

Compared to routine treatment, pulmonary rehabilitation increased the distance walked in a 6-minute walk test by a mean of 69 m (95% CI 62 to 76; 12 trials; 1,049 participants; moderate certainty) and improved the St George's Respiratory Questionnaire score by a mean of -10 points (-16 to -3; 4 trials; 540 participants; very low certainty). The subgroup analyses produced similar results for both the content and duration of the intervention. For the 6-minute walk test, exercise training combined with health education increased the distance by 64 m (53 to 75; 6 trials; 525 participants) while exercise training combined with health education plus other interventions increased by 74 m (64 to 83; 6 trials; 524 participants). Pulmonary rehabilitation of < 3 months duration increased walking distance by 71 m (58 to 85; 5 trials; 533 participants) compared to 67 m (58 to 77; 7 trials; 516 participants) for >= 3 months duration. For the St George's Respiratory Questionnaire, exercise training combined with health education improved the total score by -10 points (-23 to 3; 2 trials; 300 participants) while exercise training combined with health education plus other interventions improved it by -9 points (-22 to 3; 2 trials; 240 participants). Pulmonary rehabilitation of < 3 months duration improved the St George's Respiratory Questionnaire score by -4 points (-6 to -1; 2 trials; 360 participants) whereas the effect was -17 points (-21 to -12; 2 trials; 180 participants) for programs with >= 3 months duration. Adverse events were not documented by any of the included trials.

Pulmonary rehabilitation probably improves functional capacity and may improve quality of life in patients with pneumoconiosis.

Zhao H, et al. Pulmonary rehabilitation can improve the functional capacity and quality of life for pneumoconiosis patients: a systematic review and meta-analysis. *BioMed Res Int* 2020;(6174936):Epub

Read more on PEDro.

H. Next PEDro and DiTA updates (November 2020)

The next PEDro and DiTA updates are on Monday 2 November 2020.

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